

No. 652,664.

Patented June 26, 1900.

E. C. BURR & J. C. H. STUT.

FILTER PRESS.

(Application filed Nov. 27, 1899.)

(No Model.)

Fig. 1.

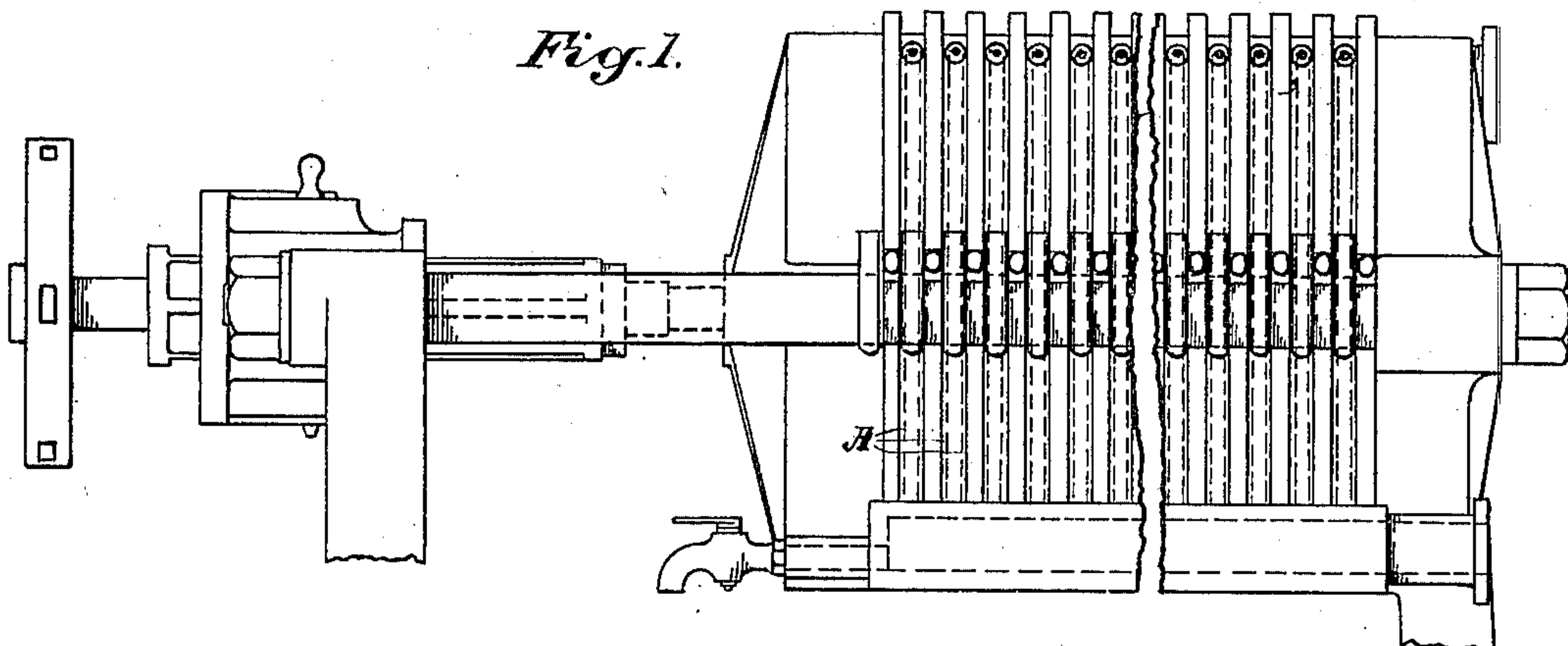


Fig. 2.

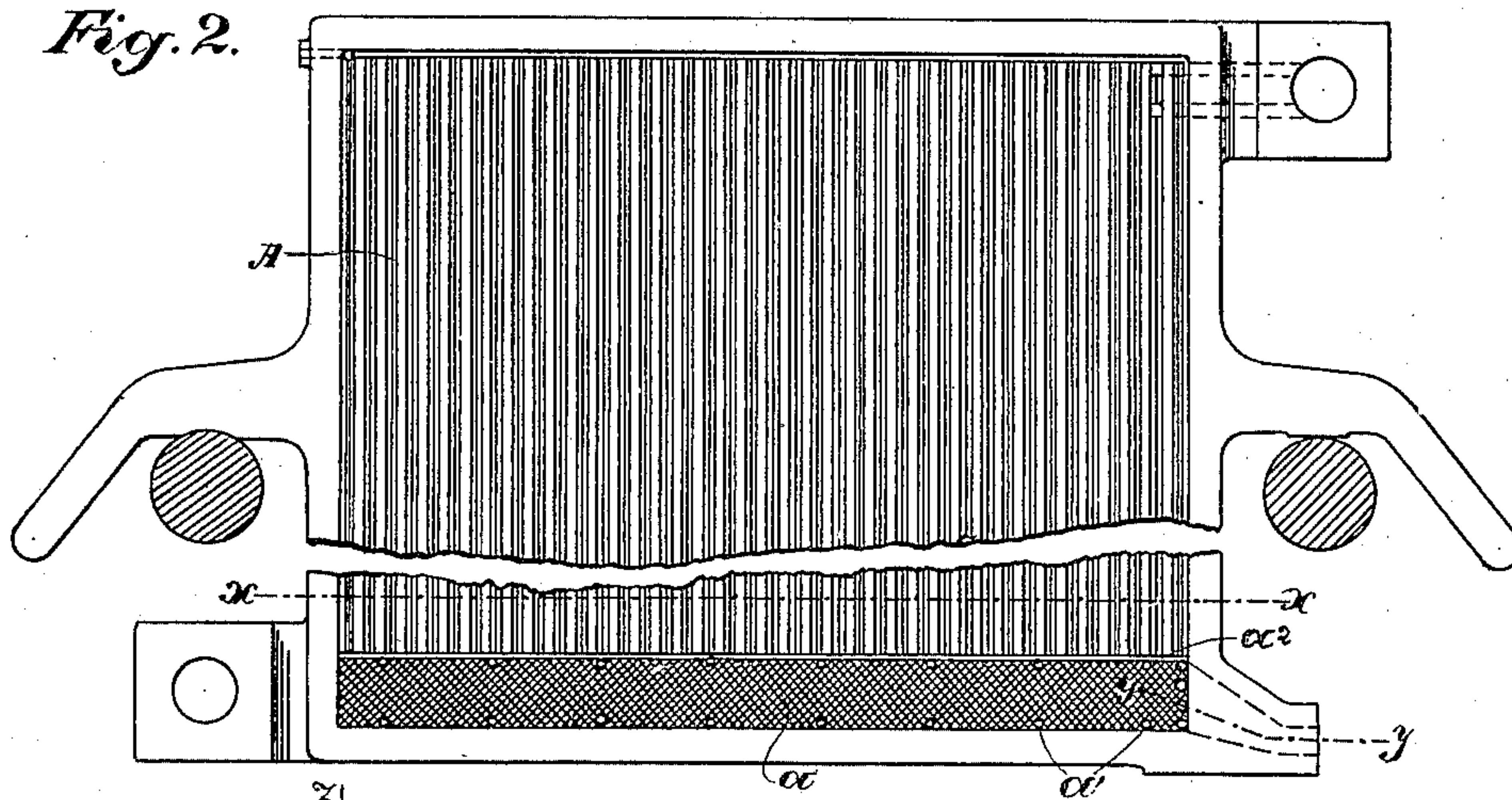


Fig. 3.

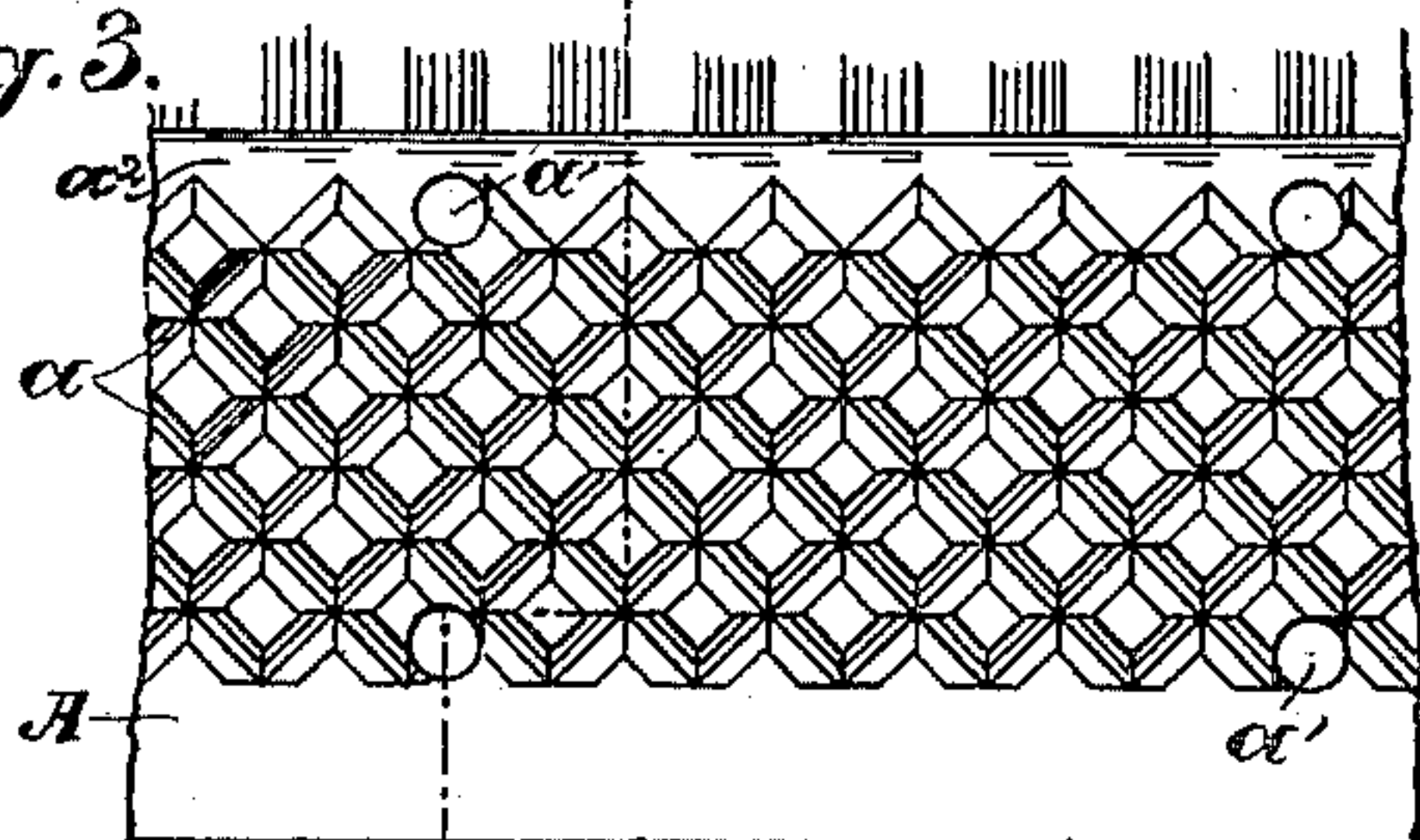


Fig. 4.

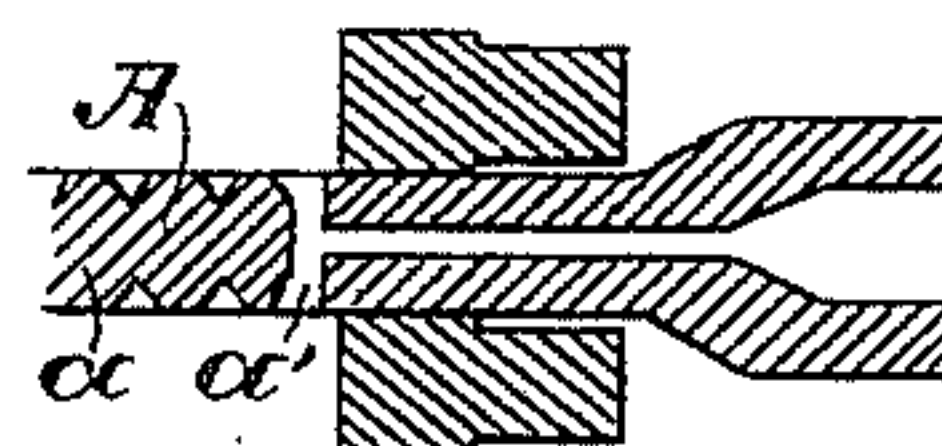
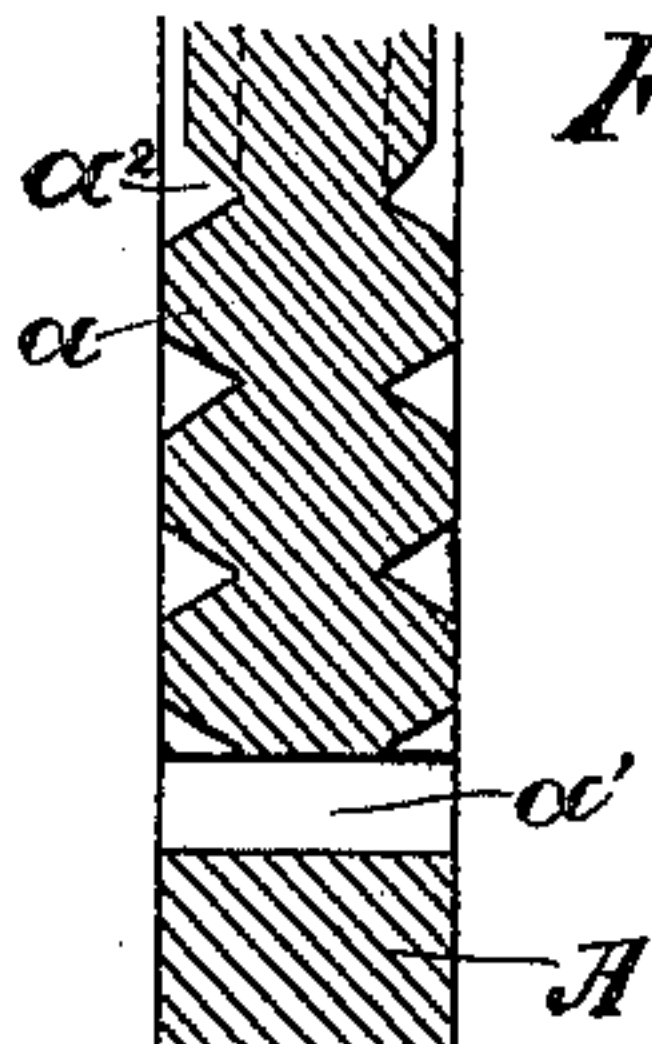


Fig. 5.

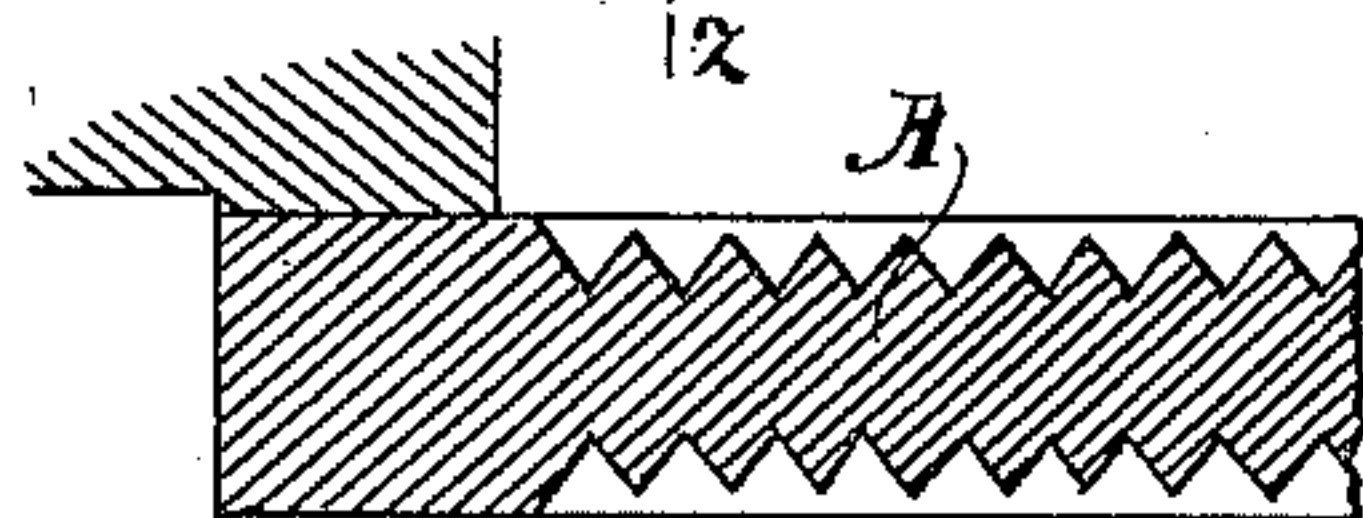


Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

EDMUND C. BURR, OF SAN FRANCISCO, AND JOHN C. H. STUT, OF OAKLAND,
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FILTER-PRESS.

SPECIFICATION forming part of Letters Patent No. 652,664, dated June 26, 1900.

Application filed November 27, 1899. Serial No. 738,409. (No model.)

To all whom it may concern:

Be it known that we, EDMUND C. BURR, residing in the city and county of San Francisco, and JOHN C. H. STUT, residing at Oakland, Alameda county, State of California, citizens of the United States, have invented certain new and useful Improvements in Filter-Presses; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to the class of filter-presses used in sugar factories to separate the juice from the lime taken from the carbonators. In a well-known form of filter-press—as, for example, that shown in the Kroog patent, No. 370,742, dated September 27, 1887—the filter-plates are found in practice to be very weak at their lower portions, and they crack in their narrow cross-sections. This is due to their construction, which in providing the necessary grooves or channels for the free flow of the juice to get easily from side to side of the plates and finally reach the exit so weakens the plate that it cannot stand the strain, and, as a matter of fact, the plate cracks in that narrow neck of the lower portion which is formed by the grooves in opposing faces, which are provided for the free flow of the juice from one side of the plate over to the other, so that it can get through the press. The object of our invention is to avoid this danger of the plate cracking; and to this end our invention consists in a filter-press plate having the novel reticulated groove-work on the lower portion of its faces, which we shall now more fully describe by reference to the accompanying drawings, in which—

Figure 1 is a side view of filter-press. Fig. 2 is a side elevation of our improved press-plate. Fig. 3 is an elevation of the reticulated groovework. Fig. 4 is a section on line $z z$ of Fig. 3. Fig. 5 is a section on line $y y$ of Fig. 2. Fig. 6 is a section on line $x x$ of Fig. 2.

In the filter-press, A are the plates between which the filter cloths or blankets lie, being held by the frames, which also provide space

for the lime cake. Pressure is exerted in the usual manner. The plates A are, as usual, riffled, grooved, or fluted in vertical planes, so that the juice may find space upon and flow down the plate-surfaces to the lower portion. At this lower portion the construction is such that the juice may flow freely from face to face and from side to side of the plates in order that it may get through and reach an exit. This freedom of flow is given by means of various holes through the plate and channels or grooves along its faces from side to side. In the usual well-known construction the grooves so reduce the thickness of the plate that a narrow neck is formed, and it is in this neck that the cracking occurs.

Our improved construction lies in forming the lower portion of the plate, on each face thereof, with the cross-area of diamond points, represented by a , which may properly be termed a "reticulated groovework." This area or band so formed may be wide enough to insure the proper capacity for its channels commensurate with the desired degree of strength in the plate itself—that is to say, the grooves or channels of this reticulated work may have sufficient capacity to provide for the free flow of the juice from side to side and yet not be extensive enough to weaken the plate. In practice we find that our plates so formed do not crack, while they serve their full function in permitting free passage of the juice while the lime cake is formed in the frame. We also make small holes a' through the plate from face to face. These are purposely made small enough to avoid any weakening tendency. A shallow groove a^2 separates the reticulated work from the riffles.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A filter-press plate having the lower portion of its faces formed or provided with a cross area or band of reticulated groovework.

2. A filter-press plate having the lower portion of its faces formed or provided with a cross area or band of reticulated groove-

work and shallow grooves defining the upper boundary of said reticulated groovework.

3. A filter-press plate having the lower portion of its faces formed or provided with a
5 cross area or band of reticulated groovework, shallow grooves defining the upper boundary of said reticulated groovework, and holes through the plate from face to face.

In witness whereof we have hereunto set our hands.

EDMUND C. BURR.
JOHN C. H. STUT.

Witnesses:

D. B. RICHARDS,
WALTER F. VANE.